



Chapter 24, Inc.  
Madison, Wisconsin

Society of Broadcast Engineers

April 2003

## Pavek Prizes Broadcast History

By Vicki W. Kipp

When a day off comes, what's a broadcast engineer to do? Here's an idea: marvel at the equipment used by the broadcast engineers, TV viewers, and radio listeners of decades past.

The Pavek Museum of Broadcasting is only a road trip away. The museum (Figure 1) is located at 3515 Raleigh Avenue in St. Louis Park, Minnesota, a Minneapolis suburb. Take a look at the Pavek Museum online at [www.pavekmuseum.org](http://www.pavekmuseum.org) or phone Pavek at (952) 926-8198. The museum is open 10:00 a.m. to 6:00 p.m. on Tuesday – Friday, and 9:00 a.m. to 5:00 p.m. on Saturday for guided tours.

The mission of the Pavek Museum of Broadcasting can be summarized in three tenets: to educate the community at large on how electronic communications impacted the evolution of society; to stimulate young people to explore science and communication arts; and to preserve historically significant items relating to the development of electronic communications.

Joseph R. Pavek began his famous broadcast equipment collection in 1946 while teaching electronics at Dunwoody Institute in downtown Minneapolis. Students routinely dismantled radios to learn about the circuits. Pavek was troubled to see the elaborately-crafted radios destroyed, and decided to take one home for preservation. Thus began his life long collecting hobby.

After retiring from decades of teaching, Joseph Pavek created his own venture, Twin City Nut and Bolt Company. While traveling through North and South Dakota, Minnesota, Iowa, and Wisconsin selling nuts, bolts, and paint, Joseph Pavek also acquired old broadcast equipment. He stored his broadcast collection at his business site.

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## DTV Dialog

By Paul Stoffel

Last month's SBE program was more of a fireside chat, instead of the proposed "shootout." We gathered to talk DTV language and to learn something new, as each of our DTV streams was diced and sliced down to maps, tables and bits. The makeshift laboratory included an ATSC stream analyzer, DTV set-top boxes, a datacasting demonstration and a computer DTV tuner/PVR setup.

The Triveni Digital StreamScope analyzer, brought in by Mark Rushton, was hooked up to an off-air antenna.

Jim Wright, Sinclair Group, aptly navigated the StreamScope's menus, using it to delve deep into our 188-byte packets. We looked at all five DTV stations in the Madison market. As with any test instrument, learning what the menu parameters mean is equally as important as the numerical values presented. Sure, we saw green, yellow, even red flashing indicators, but it will take more than a two-hour lab class (program) to know and understand what it all means.

It was time to compare the assembled set-top boxes, including vintage Panasonic TU-DST50 and RCA

## Next Meeting:

Wednesday,  
April 23, 2003

Avid Broadcast  
Tour

Dutch Treat Dinner  
at 5:30 PM

at J.T. Whitney's  
674 S. Whitney Way

Meeting and Program  
at 7:00 PM

at Avid Broadcast  
6400 Enterprise Lane

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DCT-100 boxes; Samsung's 150, 151, and 165 models; and a Zenith HD420. The purpose of this comparison was not to determine the better box, but to illustrate their ATSC-compliant features and how they react to our individual DTV signals.

The boxes capable of showing an electronic program guide (EPG), generated from WISC and WHA, were the Samsung models and the RCA. The new Zenith box lacked a guide button. WHA has a second audio service on 21-2 for (when-available) Spanish language and descriptive audio

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## CHAPTER 24 OFFICERS

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## March Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Tuesday, March 18, 2003 in Studio A at Vilas Hall on the campus of the University of Wisconsin in Madison, Wisconsin for the chapter's monthly meeting. There were 17 members in attendance, 14 of whom were certified and 5 guests.

The meeting was called to order at 7:12 PM by Chapter Chair Tom Smith. Minutes of the previous meeting were approved as published in the March issue of the newsletter. Newsletter editor Mike Norton announced the deadline for articles for the April issue will be midnight, Friday, April 4th. The folding party will be held Wednesday, April 9th at 5:30 PM at WKOW-TV.

Chair Tom Smith stated that Treasurer Stan Scharch reported the chapter currently has a balance in the black.

Next month's program will be a tour of Avid. The May program will cover IOT applications.

Sustaining membership chair Fred Sperry reported a total of 24 sustaining members with a new member being Sound Devices, LLC and recent renewals being Scharch Electronics, Harris Corporation, Fujinon, WMTV-TV (15), Wisconsin Public TV, Maney Logic, and Swiderski Electronics.

Certification chair Jim Hermanson reported Clark Jillson passed his CBNT exam. The deadline for the June exam is on April 25th.

Frequency Coordinator Tom Smith reported on a number of items. Updates and revisions affecting the Broadcast Auxiliary Service rules were published March 17th in the Federal Register and will be effective April 16th, except for rules affecting emissions, which will be effective Oct 30th. Stations should update their copies of the rules. Comments on Further Notice of Proposed Rulemaking for cable and consumer electronics industries integrated digital cable television receivers are due March 28th. Responses to the inquiry regarding additional spectrum for unlicensed devices in the TV band have been received by the FCC. A Notice of Inquiry issued regarding interference immunity performance specifications for receivers has been issued. A report on the FCC's recent ownership hearing was made, noting the small amount of time for public comments.

In unfinished business, Election Chair Steve Paugh reported on the ballot for the chapter's upcoming elections. Ballots will be included with next month's newsletter.

Chapter Chair ..... Vicki Kipp  
 Vice Chair ..... Tom Smith  
 Treasurer ..... Stan Scharch  
 Secretary ..... Jim Magee

The Broadcast Clinic planning committee held their first meeting. They need to establish the total program 6 weeks earlier than

(continued on next page)

## March Business Meeting Minutes (continued)

last year. Papers are due May 1st. Their next meeting will be May 12th.

SBE Executive Director John Poray was in attendance. He was in Madison working on the National Awards Dinner to be held during the 2003 Broadcasters Clinic. He reported that the FCC's Office of Engineering and Technology had invited the SBE for feedback on the 2 GHz retuning, such as what equipment was being used and costs.

The National SBE will have a booth at NAB, in the same location as before, but closer to the engineering sessions. At NAB there will be an SBE membership meeting on Tuesday and the SBE board meeting will be Sunday morning.

The meeting adjourned at 7:28 PM.

The program this month was a shootout of various DTV set-top boxes and PSIP information and monitoring, and was coordinated by Paul Stoffel.

*Submitted by Jim Magee, Secretary*

### Certification Information Available

New certification information brochures and applications are available from Jim Hermanson, the Chapter 24 Certification Chair.

If you are considering taking an SBE certification exam, would like more information, or have questions about the process, you are encouraged to contact Jim. He can be reached by sending an email message to [jmh@execpc.com](mailto:jmh@execpc.com).



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## AMATEUR RADIO NEWS

*By Tom Weeden, WJ9H*

- The National Association of Broadcasters has announced that amateur John Reiser, WQ4L, of Mt Vernon, Virginia is the winner of its 2003 Radio Engineering Achievement Award. According to NAB, Reiser, who retired in 2000 as a senior broadcast engineer with the FCC's International Bureau, played a significant role in many landmark rulings during his 39 years with the FCC, including the standardization of the FCC national program for broadcast station inspections in the 1970s, the 1976 revision of the broadcast rules and regulations, and the reorganization of the Broadcast Bureau into what is now the Media Bureau. "For many years, his extensive knowledge of the FCC rules and hands-on experience and day-to-day contact with broadcast stations made him a critical resource to the industry in helping broadcasters comply with the FCC rules," the NAB said in announcing the award. NAB award winners will be honored April 9 at the NAB2003 convention in Las Vegas.

- Veteran ABC Radio Networks commentator Paul Harvey offered some kind words for amateur radio on "page four" of his March 19 *Paul Harvey Noon News and Comment* program. "America's quiet warriors are the legion of ham radio operators, 700,000 of them, who are always at ready for backup duty in emergencies—amateur, unpaid, uncelebrated, civilian radio operators, during and after floods and fires and tornadoes," Harvey said. "After the 9/11 attacks, hams were indispensable in reuniting friends and families. Most recently it was they who expedited the search for debris after the disaster to the space shuttle Columbia, and right now, at this moment, they are involved in homeland security to a greater degree than you would want me to make public."

The commentary's enigmatic and mysterious final sentence apparently refers to the fact that many Amateur Radio Emergency Service (ARES) and Radio Amateur Emergency Service (RACES) teams have ramped up their alert status.

- "The Daily DX" web site <<http://www.dailyydx.com>> reports that Diya Sayah, YI1DZ—one of the primary operators at the Baghdad Radio Club YI1BGD station in Baghdad—had dismantled the YI1BGD station equipment prior to the outbreak of hostilities. Sayah stored it in a safe place—if there can be such a location in the besieged capital city at this point. The Daily DX Editor Bernie McClenney, W3UR, says he doubts there will be any activity in the near future from YI1BGD "much less any other YI stations."

The YI1BGD club station went on the air in the 1970s. The Iraqi Association for Radio Amateurs (IARA) remains an International Amateur Radio Union (IARU) member-society.

*(Excerpts from the American Radio Relay League's "The ARRL Letter")*



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## Pavek Prizes Broadcast History (continued from page 1)



**Figure 1.** Pavek Museum is in the St. Louis Park suburb of Minneapolis.

During the seventies, Joseph Pavek sought a sponsor to acquire, shelter, staff, and exhibit his collection to the public. Unsuccessful in finding a benefactor for his equipment, Pavek resigned himself to selling the entire collection at auction.

When Pavek's dream seemed most elusive, hope appeared in the form of Earl Bakken. Bakken, the co-founder of Medtronic and inventor of the wearable pacemaker, shared Pavek's fondness for old radios. Earl Bakken had funded his college education by repairing radios and televisions. Bakken envisioned the educational opportunities which Pavek's collection could provide.

Joseph Pavek, Earl Bakken, and Paul Hedberg of the Minnesota Broadcasters Association banded together to create a non-profit organization to fund the museum.

The museum opened on October 29, 1988 with Pavek's collection of transmitters, radios, and televisions which dated from 1900 to 1950. Joseph Pavek passed away in June 1989 at age 81 after having realized his life's ambition to create a broadcast history museum.

### Joseph Pavek Collection

The Pavek Collection features a working 1912 rotary spark-gap transmitter (Figure 2). Historically,



**Figure 2.** Sending an S-O-S on a spark-gap transmitter.

telegraph operators were called "sparks" because a spark was generated when the operator keyed a character on the transmitter. This set cost about \$88 in 1912. The spark-gap transmitter was popular from 1900 to 1920 when it was superceded by the vacuum tube oscillator. Pavek's collection also includes early-Twenties crystal radios, and a chronologically organized vacuum tube display.

### Pavek Ham Shack

Devoted amateur radio operator Joseph Pavek went by the call sign WOOEP. When Pavek died, the Pavek Museum convinced the FCC to reassign his call sign to the museum's club station. The Pavek club station WOOEP ("Old Empty Pockets") is set up for communication on the 20-, 15-, 10-, and 2-meter Bands. A 60-foot crank up tower holds a tri-band HF antenna and a VHF antenna. QSOs are usually made using WOOEP's 100-watt Kenwood 440 transmitter, although a 600-watt Collins KWM2 transmitter is also available.

### Jack Mullin Collection

The Jack Mullin Collection covers 125 years of audio recording technology spanning from phonograph to television to magnetic recording.



**Figure 3.** Wurlitzer P-10 "Debutante" Jukebox.

The Museum's Wurlitzer P-10 Jukebox, the first model manufactured by the Rudolph Wurlitzer Company, was aptly nick-named the "Debutante". This early mechanical jukebox lifts up the record when it is finished playing and drops it into a depository below (Figure 3).

The recording lathe (Figure 4) contained in the Mullin Collection was used to cut the Vitaphone discs for the first talking movies.

(continued on next page)



**Figure 4.** Vitaphone disc record lathe.



## Pavek Prizes Broadcast History (continued)



**Figure 5.** These 1920's cone speakers originally sold for about \$10 each.

The cone speakers on display – adorned with wood cutouts of flowers, ships, and castles – were both functional and artistic (Figure 5).

At the end of World War II, Jack Mullin brought two AEG Magnetophon tape records from a German radio station to the United States. Mullin introduced tape recording technology to America. The first recorded radio program in US history occurred when Bing Crosby hired Mullin to record Crosby's radio show.

In 1952, Emory Cook introduced the "Binaural" Disc. Binaural records contain two separate tracks to be played simultaneously by a single arm with two pickup needles (Figure 6). Cook's product was doomed once the mono groove stereophonic disc arrived in 1958.

### Charles Bradley Collection

The Charles Bradley Collection kept in the Minnesota Room features more than 60 radio and television manufacturers who had operations in the Twin Cities area.

### Other Exhibits

One of the first Theremins made by RCA is on display (Figure 7). Russian physicist Leon Theremin



**Figure 6.** Binaural Disc was an early method of stereo audio.



**Figure 7.** Theremin is played by moving hands near the antennas without touching them.

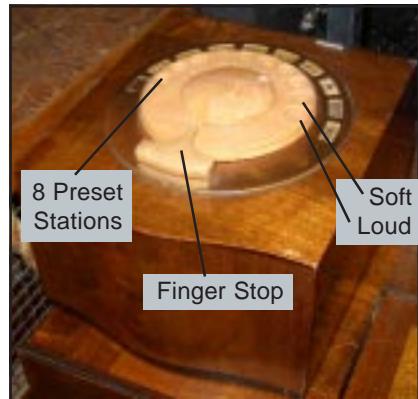
invented this unusual instrument in 1919. The Theremin is played by moving one's hands near the vertical pitch antenna and horizontal volume antenna without actually touching the antennas. Theremins create an eerie sound effect typical of outer-space movies.

One exhibit that particularly impressed me was a Philco radio model 39-116 with a wireless remote control called "Mystery Control" (Figure 8). Philco released this innovative product in June 1938. The Mystery Control resembled an old rotary dial telephone without the handset (Figure 9).

By dialing one of the ten dial finger holes to the finger stop, listeners could remotely switch to any of eight preset stations. To raise or lower volume, the listener dialed from the loud or soft finger hole to the finger stop, and then held down the finger stop until the desired volume was reached. A pulsing mechanism connected to the



**Figure 8.** Philco radio model 39-116 with a wireless remote control called "Mystery Control" sold for \$198 new.



**Figure 9.** When dialed to finger stop and released, the 6 by 8 by 4 inch remote control causes the 39-116 receiver to retune itself to the selected station within 15 seconds.

dial times the return of the dial when it is released. Inside the wooden remote control case is a battery operated oscillator which is normally off and only turned on during dialing operations. Using control frequencies ranging from 350 to 400 Kilocycles, the Mystery Control transmits RF pulses to a receiver in the radio cabinet. To adjust volume, the control box sends a continuous RF signal. The Mystery Control cannot remotely power on the Philco radio because the control frequency receiver in the radio is turned off until the radio is powered on.

Another memorable exhibit was the 1949 Stewart-Warner Wonder Window television (Figure 10). When you want to watch a show, you lift the hinged lid containing a "Photo-Mirror" screen to a 45 degree angle above the cathode ray picture tube. The mirror displayed a reflected, magnified image of the picture on the CRT screen.

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## Pavek Prizes Broadcast History (conclusion)



**Figure 10.** 1949 Stewart-Warner AVC1 Wonder Window "New Yorker" television.

### Interactive

Groups can create their own radio broadcasts from the Pavek Museum's 1950s era studio KPAV-AM 1200 kHz broadcast station.

The Pavek Museum conducts 6,000 tours per year for school children. The children's tour includes visitor participation in a television quiz show.

Children in fourth, fifth, or sixth grade can enroll in Pavek's Saturday morning 'Magnets to Megacycles' class about basic electricity. Electronics savvy volunteers teach 'Magnets to Megacycles'. The class

involves lectures, problem solving, and hands-on construction.

Adults may enroll in Pavek's 'Historical Perspectives' or 'Vintage Radio Service' classes. 'Historical Perspectives' is for post-secondary students preparing for a career in broadcasting or mass communications. The course studies the history and development of the broadcast industry. The 'Vintage Radio Repair Service' class is for broadcast equipment collectors and hobbyists who would rather fix old equipment than throw it out. This class runs for seven Saturday mornings.

Those who choose to sponsor the Pavek Museum of Broadcasting receive free admission, the bimonthly newsletter, priority invitations to museum special events, a discount at the museum gift shop, use of museum research library and archives, and use of museum equipment to transfer older recordings to newer formats. While the most popular dub request is transfer of wire recordings which were popular from 1946 to 1950 to cassette or compact disc, the Museum can dub just about any audio tape format including LPs up to 16-inches.

The Pavek Museum's technical library features schematics for most consumer radios, televisions, and hi-fidelity equipment up to 1970; 22 volumes of John F. Rider's Perpetual Troubleshooter Manuals; Howard W. Sam's PHOTOFACt Manuals 1-1200; many amateur radio schematics and operating manuals; RCA manuals; Western Electric manuals; every TV-Guide from volume 1 through 1980; past issues of *Radio Mirrors*, *Popular Radio*, *Radio News*, *QST*, *Radio*, and *CQ*; and old catalogs.

The Museum's Director, Steve

Raymer, has a background in antique radio repair. When I visited the Museum's Technical Shop, Steve was advising an old-radio enthusiast about replacing capacitors and resistors in his 1939 Emerson radio. The Technical Shop would draw out the treasure hunter in any engineer. This large room contains all kinds of retired equipment, some of it for sale to the public. The substantial assortment included Morse code keyers, vintage television sets, radios, and VTRs; rotary dial telephones; ham radio equipment; transmitters; a slow motion VTR; books about ham radio and broadcast technology; and a vast collection of working vacuum tubes for older devices.

Today, broadcast equipment is highly-integrated. Mechanical parts have been replaced by hard drives. Minuscule circuits with VLSI make some boards almost impossible to service. In contrast, the Pavek Museum's broadcast equipment has mechanical parts, discrete components, and spacious circuit boards which make for easier understanding of how the equipment works. Glamorous lighted signs promoting vacuum tubes for receivers made me ponder the days of user-serviceable appliances and TV repair people who made house calls. I also enjoyed the novelty of a broadcast environment constant enough that station call letters could be permanently labeled on receivers.

In conclusion, a day off exploring at the Pavek Museum of Broadcasting is a day well spent.

*Acknowledgements:* Stephen Raymer, Director of the Pavek Museum of Broadcasting; <http://members.aol.com/philcomc/mcooper.htm> by Chuck Schwark; <http://www.tvhistory.tv/>.



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## DTV Dialog (continued from page 1)

for the blind. The Zenith and newer Samsung 151 and 165 models are capable of switching between the two audio services. (For NTSC, we call this SAP, secondary audio program.) Their respective owner's manuals fail to make this switching feature obvious. Zenith's button is called "audio" and Samsung's is called "MTS." With a second audio service, along with its corresponding higher audio PID number, the 1998 Panasonic box unfortunately defaults to the higher audio PID.

The Zenith box has put the menu display on both the DTV and NTSC outputs. For the Samsung boxes, the menus do not display on the NTSC video output. The Zenith box offers a glimpse at the station-generated derived EIA-708 closed captioning, allowing the viewer to choose the

visual attributes of the displayed captions, like font style, color, and size. There is still much to be learned about digital TV closed captioning (DTVCC). When buying a DTV tuner (and if captioning is important to you) it is difficult for the consumer to know for sure if the tuner is DTVCC compliant. Does the tuner display 708-type captions? If the tuner is a set-top box, does the box insert backward compatible 608-type captions on the NTSC video output?

Early in March, WHA-DT introduced (demonstrated) DTV datacasting to the University of Wisconsin Board of Regents using Kencast Fazzt software provided by John Reuter from Alpha Video. This demonstration was again shown during the evening's program. Opportunistic null packets data insertion is used to send university

course work from a master control's datacasting server to a "student" computer that has an installed PCI tuner card and client software. The background channel was an internet connection using a browser interface. Logic Innovations equipment is used for packetizing and remultiplexing.

The final portion of the program was a demonstration of the personal digital recorder (PDR, let's say). Leonard Charles brought in a computer equipped with an accessDTV tuner card and managing software for recording and playing of the ATSC stream.

The tradition of sharing and learning continues at our chapter meetings. Let's continue to do more DTV fireside chats, with or without the fire.

## SBE Short Circuits — April 2003

**By John L. Poray, CAE  
SBE Executive Director**

### RENEW MEMBERSHIP TODAY

Even though April 1st has passed, Regular, Senior, Associate and Student members can still renew their SBE membership and not miss any issues of *The SBE SIGNAL*, discounts on publications and certification or access to the SBE JobsOnline, Resume Service or insurance. Use your renewal form mailed to you in February. If you need a new form, call or e-mail Angel Bates at the SBE National Office at (317) 846-9000 or abates@sbe.org.

### CHAPTERS CAN "BROADCAST" MEETINGS

SBE chapters will have the opportunity to stream chapter meetings or other chapter events for free, thanks to Tieline of America and BnetRadio. Tieline of America has made available to SBE chapters, through BnetRadio, free access to one of their POTS Codecs units for the purpose of streaming SBE meetings and related events. Thanks to BnetRadio studios in Houston, some SBE events will be carried live and all

will be archived for others to access on demand.

Tieline General Manager, Kevin Webb, has made a permanent loan to BnetRadio of this unit for this purpose. BnetRadio's Dave Biondi will ship the remote unit to you prior to your event. You will need a phone line to hook it to and you provide the manpower for the "remote". After the event, you ship the unit back to BnetRadio. If you already have a Tieline unit available from a station in your area, you can just call the event in without the shipping hassle.

Other SBE events are in the works using the Tieline POTS Codecs unit. A US wide SBE meeting that would include the folks at SBE HQ and elected officers, anchored out of the BNet Studios, is a possibility. Calls would be accepted with questions and comments from around the country. Pending sponsors for phone lines, BNetRadio will be at NAB2003, streaming the SBE Emergency Alert System session again and also the SBE Membership Meeting (anyone interested in helping with the phone line cost should give Dave Biondi a call at 713-926-2209 as soon as possible).

If your SBE chapter would like to use the Tieline POTS Codecs for a future meeting, contact Dave Biondi at the number above. Just give him enough time to get your program scheduled and ship the unit to you.

Thanks again to Kevin at TieLine and Dave at BnetRadio for making this technology available to SBE chapters.

### NEW HANDBOOK FOR RADIO OPERATORS IN STOCK

The new SBE Handbook for Radio Operators is now available from the SBE National Office.

This new handbook is designed to help radio board operators learn more about the broadcasting business from both the technical and business side. The handbook covers such topics as FCC rules, technical layout of a typical station and the general responsibilities of a radio operator. An overview of station management and professional etiquette is included along with chapters on station logs, the Emergency Alert System, safety requirements and operational procedures for trouble situations. It will be helpful to anyone,

(continued on page 11)

## PROGRAM COMMITTEE CHAIR INFORMATION

**By Steve Paugh**

As your new Program Committee Chair, I will endeavor to continue the fine work of those who preceded me. I would like to especially thank Denise Maney for her many years of service as Program Chair. It will be a challenge to continue the high degree of professionalism that Denise brought to this office.

I cut my broadcasting teeth at WKOW-TV under then chief engineer Bob Zuelsdorf and later David Wood. David went on to found Ensemble Designs after a successful career at Grass Valley. Bob eventually joined

Dick Gall at CTI before moving on to Grass Valley and later joined David at Ensemble designs. I also went to work at CTI learning the consulting engineering business, where I was fortunate to meet the legendary CATV entrepreneur "Hub" Schlafly. Longing for the glamour of the audio-video technical crafts, I joined Rustad-Wickhem Productions in 1988, which eventually folded back into the Morgan Murphy Company, the parent of my current employer, WISC-TV. I joined SBE in 1994 while working in the production business.

My goal as program chair is to find

topics of interest to all members of Chapter 24, be they employed in broadcasting, cable, production, consulting, manufacturing or education. I would also like to draw on the talents of our members to share their knowledge with their peers.

If you have a topic that you would like to learn more about, or perhaps you yourself have knowledge that you would like to share with others, please contact any of the program committee members: Steve Paugh, [spaugh@wisctv.com](mailto:spaugh@wisctv.com), 277-5139; Fred Sperry, [fsperry@ecb.state.wi.us](mailto:fsperry@ecb.state.wi.us), 264-9806; Steve Zimmerman, [szimmerman@wkowtv.com](mailto:szimmerman@wkowtv.com), 274-1234.

### Morse Code Class April 19th

**By Darryl Lonowski**

Dear Prospective Code Students,

I am looking forward to showing you how much fun learning code and CW operations can be. I was the world's worst code student until I found Code Quick.

From this moment on; NO MORE DOTS AND DASHES, Or DITS AND DAHS ! CODE IS NOT A VISUAL MODE. You wouldn't try to taste a pizza with your ears, so why should you try to "hear code" with your eyes? (This is one of the most common errors new code students make.)

I have made arrangements with Dr. Wheeler to get 10% off the "retail" price listed on the CodeQuick Store website products (when purchased through me), as well as a reduced rate from the normal \$6-7.00 shipping charge for making a volume order and getting all packages in one shipment.

If you want to purchase CodeQuick products, but cannot attend the class, I will submit your order with the class and give you the same discount. It will be up to you to arrange to pick it up at the class time, or from me, at my convenience. I will NOT be shipping.

I encourage all students to look at Dr. Wheeler's website at

[www.cq2k.com](http://www.cq2k.com) for complete descriptions of the different products.

*If you order the software, you must specify your operating system.*

I would recommend the "Compact Disc with Computer Software Bundle" which includes the entire course with book, flashcards, and compact discs of the course (which are really very convenient compared to the tapes) as well as the innovative Software Program which I have used and think is excellent. It also gives you written tests and over 900 practice QSO's. You need a computer (PC with Windows 95 through XP) with CD drive to use the software program. This "Bundle" represents a discount of \$41.60 over each item purchased separately.

NOTICE! I will only teach this class if we have a minimum of 10 students. So get your friends and other family members to take this opportunity to save money on the program, attend a FREE Class, and get off to a good start on the road to becoming a seasoned old fist.

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Complete information and full payment must be received by April 10th in order to make this special arrangement with Dr. Wheeler.

### HAVE AN IDEA FOR A SBE PROGRAM?

Is there a topic you would like to see covered at one of our local Chapter 24 meetings? Is there a technology that you would like to learn more about? Or, better yet, is there a topic that you are qualified to speak on at an upcoming meeting?

Please forward your ideas to one of the Program committee members.

Thanks to Paul Stoffel for arranging the DTV set top box program for the March meeting.



# FCC Rulemakings

**Compiled By Tom Smith**

## PROPOSED RULEMAKINGS

**ET Docket No. 02-380; FCC 02-328  
Additional Spectrum for  
Unlicensed Devices below 900  
MHz and in the  
3 GHz Band.**

The comment period for this rulemaking has been extended from April 7, 2003 to April 17, 2003. Reply comments are now due by May 16, 2003. The original date for reply comments to be filed was May 6, 2003. This action was in response to a petition from the Association for Maximum Service Television. The Commission took this action on March 28th and released it on March 31st. Part of this rulemaking proposes that unlicensed devices –such as wireless computer networks– would be allowed to operate in the TV broadcast band.

**MB Docket No: 03-15; RM 9832  
Second Periodic Review of the  
Commission's Rules and Policies  
Affecting the Conversion to Digital  
Television**

**MM Docket No. 99-360  
Public Interest Obligations of TV  
Broadcast Licensees**

**MM Docket No. 00-167  
Children's Television Obligations  
of Digital Television Broadcasters**

**MM Docket No. 00-168  
Standardized and Enhanced  
Disclosure Requirements Foe  
Television Broadcast Licensee  
Public Interest Obligations**

The FCC has extended the comment period on its inquiry concerning the

DTV transition. The comment period now ends on April 21, 2003, with replies due on May 21, 2003. The original dates were April 14, 2003 and May 14, 2003, respectively. This action is in response top petitions from the National Association of Broadcasters and the Association for Maximum Service Television. The FCC took this action on March 24th and released the notice on March 26th. The inquiry is a periodic review of the DTV transition and address issues and rules that may require changes to facilitate the transition of DTV.

**WT Docket No, 02-68; 03-66; 03-67;  
MM Docket No. 97-217  
Amendment of Parts 1, 21, 73, 74  
and 101 of the Commissions Rules  
to Facilitate the provision of the  
Fixed and Mobile Broadband  
Access in the 2150-2162 and 2500-  
2690 Bands; Part 1 of the  
Commissions Rules-Further  
Competitive Bidding Procedures;  
Amendment of Parts 21 and 74 to  
Enable Multipoint Distribution  
Service and the Instructional  
Television Fixed Service  
Amendment of Parts 21 and 74 to  
Engage in Fixed Two-Way  
Transmissions; Amendment to  
Parts 21 and 74 of the  
Commissions rules With Regards  
to Licensing in the Multipoint  
Distribution Service and in the  
Instructional Fixed Service for the  
Gulf of Mexico**

In this notice, the FCC has started an inquiry that would completely change the face of the Instructional Television Fixed Service (ITFS) and the Multipoint Distribution Service (MDS and MMDS) band. The FCC –along with requests from the Wireless Communications Association International, the National

ITFS Association and the Catholic Television Network– are proposing a number of changes to the band. The two main changes would be to move from site-based licensing to geographic licensing, or from licensing a transmitter to the FCC awarding a license to a market based area. The second major change would be the dividing of the band into low-power sections for two-way use and one or more high power sections for the current ITFS and MMDS users. The two-way use would be used for Third Generation mobile phone service or broadband Internet. The reduction of Spectrum for MMDS and ITFS would mean that any TV use would have to be digital, with multicasting of a number of programs per channel.

The FCC has proposed many rules already concerning changes in licensing, auctions and transitions to new services. With previous proposals to use the ITFS and MMDS bands for 3G phones and broadband, and the amount of proposed rules, it is fairly safe that there will be major changes in the band.

The notice was adopted on March 13, 2003 and released on April 2, 2003. The comment period will last 90 days after publication in the FEDERAL REGISTER, with replies due 45 days later.

**ET Docket 03-65  
Interference Immunity Performance  
Specifications for Radio Receivers;  
Review of the Commission's Rules  
and Policies Affecting the  
Conversion to Digital Television**

The Commission has started an inquiry into the possibility of  
(continued on page 10)

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## FCC Rulemakings (continued from page 9)

incorporating receiver interference immunity standards into its spectrum policy. This was an issue discussed in the Spectrum Task Force inquiry.

In this notice, the FCC asks if it should develop standards based on incentives, guidelines, or regulatory requirements. Incentives would be based on programs that allow the various receiver manufacturers associations to set voluntary standards. Guidelines would be the FCC publishing suggested standards in an "OET Bulletin" or some other FCC technical publication. The final method would be the FCC placing minimum standards in their rules.

In this notice the FCC asked for comment on every possible aspect of receiver design whether it was selectivity, shielding, noise sensitivity, or in the case of digital, error correction and considerations for the type of modulation methods of the signal.

Also discussed was if various services should be treated differently. The Commission asked for comments concerning DTV receiver standards, which the FCC would like "fasttracked" because of the not-so-faraway requirement that sets of certain sizes have them built-in. Finally, the FCC asks about the effect standards would have on the users of the billions of existing receivers.

The notice was adopted on March 13, 2003 and released on March 24, 2003. Comments are due 75 days after Publication in the FEDERAL REGISTER with replies due 30 days later.

The full copy of the notice can be found by searching the FCC Document search site. There is no link to the full release from any of the

headline sections, only the press release and the Commissioners statements.

The FCC is addressing the receiver issue with that idea that both ends of the transmission system must be addressed in order to set standards for good spectrum management.

### FINAL RULEMAKING

**ET Docket No. 01-75  
Revisions to Broadcast Auxiliary Service Rules In Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Parts 74, 78 and 101 of the Commissions Rules**

**RM-9418  
Telecommunications Industry Association, Petition for Rule Making Regarding Digital Modulation for the Television Broadcast Auxiliary Service**

**RM-9856  
Alliance of Motion Picture and Television Producers, Petition for Rule Making Regarding Low-Power Video Assist Devices in Portions of the UHF and VHF Television Bands**

On March 17, 2003, the FCC published the rules concerning the broadcast auxiliary bands in the FEDERAL REGISTER. The FCC had previously published the rules, but they do not take effect until 30 days after being published in the FEDERAL REGISTER. The new rules take effect on April 16, 2003, with two parts of the rules taking effect on October 30, 2003. Those parts of the rules are part 74:535 Emissions and bandwidth and part 74:637 Emissions and Emissions limitations. The rules can be downloaded from either the FCC or

the Government Printing Office websites.

**CS Docket No. 99-250, RM-9257  
Amendment of Eligibility Requirements in Part 78 Regarding 12 GHz Cable Television Relay Service.**

This action reaffirms an earlier action to allow the Cable Television Relay Service to share the 13.20 - 13.25 GHz band with Broadcast Auxiliary Service on a secondary basis. This would allow cable systems 550 MHz of contiguous bandwidth for transmission of programming to outlying systems from a central headend.

Walt Disney Company/ABC, the National Association of Broadcasters, Association for Maximum Service Television, AOL Time Warner Inc. and the Society of Broadcast Engineers had filed a petition for reconsideration. In their filings, the petitioners stated that the use of this spectrum by the cable operators would be full time and that the secondary status would be meaningless. This full time use would then force broadcast users to contact the cable systems whenever they wished to use the spectrum instead of the cable operators having to coordinate with broadcasters. The FCC denied the petition, claiming that cable systems would not build in areas where their signals would be disturbed by broadcast use, and that systems can be designed to avoid interference.

The FCC denied the petition on action adopted on March 20, 2003 and released on March 26, 2003.

*From FCC Releases ([www.fcc.gov](http://www.fcc.gov)) and the FEDERAL REGISTER ([www.access.gpo.gov](http://www.access.gpo.gov))*



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## LOCAL LEGALS

**Compiled by Tom Smith**

**W23BW, Channel 23, Madison, WI**

Three Angels Broadcasting Network, Inc. is asking the FCC for permission to move their transmitter and increase power and antenna height. The station currently operates on channel 54 with a power of 9.36 kW at 320 meters above sea level (46 m above ground) on a high rise office building on West Washington Avenue. They currently have a construction permit to move to channel 23 and operate with 15 kW from that site.

The new transmitter site is at the WKOW Doppler tower, and will operate with a power of 70.6 kW at 416.7 meters above sea level (91.5 m above ground). The antenna will be cardioid directional with the main lobe pointing 10 degrees West of true north.

The application was accepted on March 27, 2003 and the public notice was released on March 31, 2003.

*From FCC Releases and Databases ([www.fcc.gov](http://www.fcc.gov))*

## SBE Short Circuits (continued from page 7)

those brand new to radio or the seasoned veteran, who pulls a shift behind the console.

SBE has developed a new certification program and exam, which will be available when the book is released at the end of March. The Handbook will include sample questions to help users prepare for the optional test.

**Tom Sibenaller**  
Sales Representative  
**ROSCOR**  
Media & Information Technologies  
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fax: 608-785-0505  
e-mail: [tsibenaller@roskor.com](mailto:tsibenaller@roskor.com)

## Cast Your Ballot!

**By Steve Paugh,  
Nominations Chair**

Enclosed with this newsletter is the official ballot for the SBE Chapter 24-2003 election of officers. The deadline for returning your ballot to the nomination chair is Friday, April 25th, 2003. The nominations committee will count the ballots on the evening of Monday, April 28th, 2003 at WISC-TV.

You may turn in your ballot in person during the April 23rd, 2003 chapter meeting. If you are unable to attend the April meeting, you may mail your ballot directly to me at:

Steve Paugh- c/o WISC-TV  
Ballot  
7025 Raymond Road  
Madison, WI 53719

Please indicate "Ballot" on the envelope and we will hold your ballot unopened until the official counting process. Your ballot must be in our possession before we begin the counting on April 28th. Remember that your membership must be current to be eligible to vote. Your membership number must be entered on the ballot for it to be valid. Thanks to the nomination committee members Jim Hermanson and Leonard Charles.

## CHAPTER 24 SUSTAINING MEMBERS

### RECENT RENEWALS:

**Harris Corporation  
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Swiderski Electronics**

### THANKS TO ALL OUR SUSTAINING MEMBERS:

**Alpha Video  
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Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

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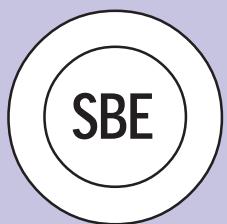
**FIRST CLASS MAIL**

Newsletter edited on Pagemaker 7.0 by: Mike Norton

Contributors this month: Vicki W. Kipp, Darryl Lonowski, Jim Magee, Steve Paugh, Tom Smith, Paul Stoffel, and Tom Weeden.  
Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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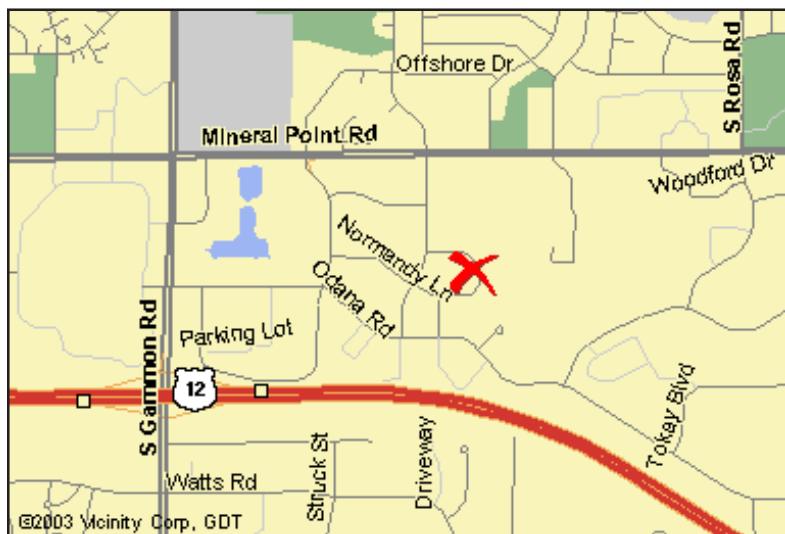
# APRIL MEETING and PROGRAM



Society of Broadcast Engineers  
CHAPTER 24 MADISON, WISCONSIN  
Wednesday, April 23, 2003

## Avid Tour and Chapter Elections

For the program this month, plan on stopping by the Avid Broadcast Systems Center. They are planning to show the various products that are developed here in Madison, and how they contribute to the Avid line of products. Also, exercise your right to vote in the Chapter 24 elections.



Dutch Treat Dinner  
at 5:30 P.M.

at J.T. Whitney's  
674 South Whitney Way

Meeting and Program  
at 7:00 P.M.

at Avid Broadcast  
6400 Enterprise Lane

Visitors and guests are welcome at all of our SBE meetings!

2003 UPCOMING MEETING/PROGRAM DATES:

Day  
Thursday  
Tuesday  
Wednesday

Date  
May 22, 2003  
June 17, 2003  
July 23, 2003

Program  
IOT Applications  
T. B. A.  
Chapter 24 Picnic

Program Committee:

Denise Maney  
277-8001

Steve Paugh  
277-5139

Fred Sperry  
264-9806

Steve Zimmerman  
274-1234